REMARKS

Reconsideration and allowance of the subject application are respectfully requested.

Claims 1, 4, 6, 8-9, 11-13, 16, and 18-117 are pending in the application. Claims 1, 13, 33, 57, 72, 85, 96, 100, and 109 are independent.

The undersigned, inventor Gerald Morrison, and Applicants' Canadian representative, Mr. David Ruston, would like to thank Examiners Zamani and Hjerpe for the cordial and productive interview of October 17, 2002. The Examiners' helpful comments and suggestions were instrumental in preparing this response.

As discussed at the interview, Applicants have added new Claims 19-117 to afford themselves a scope of protection commensurate with the disclosure. The new claims are fully supported in the specification and Drawings, and are believed to be allowable for the reasons to be developed below.

Claims 1, 3-5 and 13-18 were rejected under 35 U.S.C. § 102(b) as being anticipated by <u>Dunthorn</u>, for the reasons noted at pages 2-3 of the Office Action. However, the Examiner kindly indicated that Claims 2 and 7-12 would be allowable if rewritten in independent form. While Applicants specifically traverse all art rejections, in order to rapidly advance this case to issue

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independent Claims 1 and 13 have been amended to incorporate subject matter from the allowable claims.

Applicants also submit that new Claims 19-117 are allowable over the cited art.

Independent Claim 33 recites a novel combination of structure and/or function whereby a touch system has at least two **CMOS** digital cameras which acquire images of the touch surface from different locations. A processor processes the image to determine the location of a pointer relative to the touch surface. See, for example, Page 7, lines 19-24; Page 10, lines 3-13; and Fig. 14 of the subject application. As discussed at the interview, the use of CMOS cameras in a touch system provides unique processing advantages not achievable with the CCD cameras used in the touch systems of the known art. Thus, the claimed features of independent Claim 33 are nowhere disclosed or suggested by the cited art.

Independent Claim 57 recites a novel combination of structure and/or function whereby a touch system has at least two optical recording devices which acquire images of a touch surface from different locations. A processor processes image data to determine the location of a pointer relative to the touch surface. The processor has first and second processing **stages,** the first processing **stage** processing pixel data from

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the optical recording devices, and the second processing **stage** processing image data from the first processing stage to determine the location of the pointer. See, for example, Page 7, line 30 through Page 8, line 14; and Figs. 4 and 6 of the subject application. As discussed at the interview, this architecture enables **staged processing** of information to reduce bandwidth bottlenecks which a single processor architecture would cause. Again, the art of record fails to disclose or suggest the advantageous features claimed in independent Claim 57.

Independent Claim 72 recites a novel combination of structure and/or function whereby a **scalable** touch system has, *inter alia*, a processor which processes image data acquired by digital cameras to determine the location of a pointer relative to a touch surface. Notably, each of the digital cameras includes **a pixel array that is proportional to the number of pixels in the projected image**. The processor is able to resolve the location of the pointer with sufficient accuracy with respect to the pixels in the projected image. See, for example, Page 22, lines 13-20 of the subject application. As discussed at the interview, these advantageous features allow for touch systems as small as a PDA, yet as large as a wall. These claimed features are nowhere disclosed or suggested in the cited art.

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Independent Claim 96 recites a novel combination of steps whereby a plurality of **digital cameras in a touch system are aligned with the touch surface**. Each digital camera has a selectable pixel array which acquires an image of the touch surface. The pixels in a **subset** of the pixel array are examined to determine if the pixel subset is substantially looking along the plane of the touch surface. If the pixel subset is not looking along the touch surface plane, the position of the pixel subset is adjusted until a pixel subset is determined that is looking substantially along the plane of the touch surface. See, for example, Page 9, lines 18-28 of the subject application. As discussed at the interview, this **alignment procedure** allows wider tolerances in assembling the cameras to the touch surface. If the cameras are slightly misaligned, the alignment procedure ensures that each camera is looking substantially along the touch surface. Again, the cited art fails to disclose or suggest the combination of features recited in independent Claim 96.

Each of independent Claims 100 and 109 recites a novel combination of structure and/or function whereby an imaging assembly (or touch system) has a substantially rectangular bezel (or touch surface). **A digital camera is mounted adjacent each corner** and is oriented to capture

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overlapping images of the display (or touch) surface. See, for example, Page 7, lines 11-18; and Fig. 2 of the subject application. As discussed at the interview, the use of **four** digital cameras (one in each corner) allows for greater accuracy in calculating the position of the pointer since the triangulation calculations of up to six pairs of cameras may be averaged together. (See Page 21, lines 3-10 of the subject application.) Additionally, if a pointer is positioned adjacent one of the cameras in a corner, the other three cameras can still obtain an accurate pointer position. As with the above-discussed claims, the cited art fails to disclose or suggest the combination of features recited in independent Claims 100 and 109.
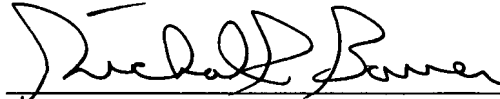
In view of the above amendments and remarks, it is believed that this application is now in condition for allowance, and a Notice thereof is respectfully requested.

Applicants' undersigned attorney may be reached in our Washington, D.C. office by telephone at (202) 625-3500. All

correspondence should continue to be directed to our address given below.

Respectfully submitted,

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